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EXAMINER	
GOODCHILD, WILLIAM J	

ART UNIT	PAPER NUMBER
2433	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/663,161	STAMLER ET AL.	
	Examiner	Art Unit	
	WILLIAM GOODCHILD	2433	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *14 June 2011*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,3-23 and 26-32* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,3-8,11-23 and 26-32* is/are rejected.

7)☐ Claim(s) *9 and 10* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *06/14/2011*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Information Disclosure Statement

1. The information disclosure statement (IDS) submitted on 06/14/2011 is in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statement is being considered by the examiner.

Response to Arguments

2. Applicant's arguments with respect to claims 1, 3-8, 11-23 and 26-32 have been considered but are moot in view of the new ground(s) of rejection.

Allowable Subject Matter

3. Claims 9-10 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claims 1, 3-6 and 26-31 are rejected under 35 U.S.C. 103(a) as being unpatentable over IBM High Availability Cluster Multi-Processing for AIX, Concepts and Facilities Guide), (hereinafter IBM), and further in view of Bruckert et al., (US Publication No. 2002/0049859), (hereinafter Bruckert) and Pangrac et al., (US Publication No. 2001/0030785), (hereinafter Pangrac), Byrne, (US Patent No. 6,229,787) and Hosler et al., (US Publication No. 2002/0009048), (hereinafter Hosler).

Regarding claims 1 and 26, IBM discloses receiving, at a single console control point for a network device cluster, user input specifying an operation to be performed [IBM, page 77, Cluster Single Point of Control, page 50, Cluster Manager, (user initiated events... the cluster manager runs scripts in response to cluster events), page 73, Reconfiguring a Cluster Dynamically, paragraph 2];

automatically and concurrently performing the specified operation on devices in the network device cluster by transforming the specified operation into one or more device-specific operation for each of the devices [IBM, page 77, Cluster Single Point of Control, page 73, Reconfiguring a Cluster Dynamically, paragraph 2 and page 50, Cluster Manager];

wherein the user input specifies a configuration command for the network device cluster [IBM, page 77, Cluster Single Point of Control, page 50, Cluster Manager, (user initiated events... the cluster manager runs scripts in response to cluster events), page 73, Reconfiguring a Cluster Dynamically, paragraph 2];

automatically and concurrently communicating the configuration command to each of the devices [IBM, page 77, Cluster Single Point of Control, page 50, Cluster Manager, (user initiated events... the cluster manager runs scripts in response to cluster events), page 73, Reconfiguring a Cluster Dynamically, paragraph 2];
concurrently reconfiguring each of the devices in network device cluster, based on reconfiguration information [IBM, page 77, Cluster Single Point of Control, page 50, Cluster Manager, (user initiated events... the cluster manager runs scripts in response to cluster events), page 73, Reconfiguring a Cluster Dynamically, paragraph 2];
one or more standby nodes [IBM, page 83, Sample Cluster Configuration, Standby Configuration].

IBM does not specifically disclose concurrently on all active routers in a plurality of active routers as a whole and only on the plurality of active routers;
active routers in the plurality of active routers;
wherein the network device cluster comprises a first switch device, the plurality of active routers, and a second switch device;
wherein the first and second switch devices are associated with different networks;
wherein the reconfiguring causes a change of one or more connection between the active routers in the plurality of active router and the switch devices.

However, Bruckert discloses a clustered system [Bruckert, figures 1a-1b, paragraph 27, line 1] including switches and routers [Bruckert, figures 1a-1b, items 106 and 114,

paragraph 27, lines 8-11 and paragraphs 106 and 112, showing multiple routers and multiple switches as part of a cluster (figures 1a-1b, items 106 and 114), which is part of a larger cluster (figures 1a-1b, items 10a and 10b), being managed].

It would have been obvious to one having ordinary skill in the art at the time the invention was made to include a cluster of routers and switches in order to ensure that the fabric connecting end nodes would be as failsafe as a cluster of end nodes, it would have been obvious to combine Bruckert with IBM, as IBM describes the management of a clustered system, Bruckert discloses other options for nodes within the clustered system.

Additionally, Pangrac discloses switches connected to different networks [Pangrac, paragraph 79 and figure 2, switches 201-1, 201-2 etc and RF Modems, 121-1, 121-N+1].

It would have been obvious to one having ordinary skill in the art at the time the invention was made to include switches connected to multiple networks in order to provide for the possibility of a switch failure but still allowing network connections to be re-routed. It would have been obvious to combine Pangrac with IBM-Bruckert as the three arts all relate to the general concept of clustered systems.

Further Byrne discloses a switch failure and the backup (standby) switch notifying the cluster to use another path [Byrne, column 6, lines 11-30].

It would have been obvious to one having ordinary skill in the art at the time the invention was made to include updating a route when a switch fails in order to provide for fault tolerance. It would have been obvious to combine Byrne with IBM-Bruckert-Pangrac, as each art relates to clustered systems and IBM discloses configuring the system in the case of a failover as does Byrne.

Further, Hosler teaches updating the routing tables on only the active routers concurrently [Hosler, paragraph 36, "the routing tables must be updated in at least the currently active member of the pair of routers..."].
It would have been obvious to one having ordinary skill in the art at the time the invention was made to include updating an active router in order to provide the active routers with the required information for forwarding packets around the network.

It would have been obvious to combine the references (IBM-Bruckert-Pangrac-Byrne-Hosler) as, IBM teaches a console control center that is capable of performing the limitations as defined in claim 1, although it does not specifically identify the limitations, the concept of a console control center at the time of the invention was and is well known for network management and cluster management. Bruckert adds the well known concepts of clusters (using a plurality of devices in a cluster, such as switches

and routers)). Pangrac merely adds the well known concept of switches connected to different networks. Byrne adds the well known concept of a standby switch. Hosler merely relates to updating only the active routers within a clustered system. Combining the related arts would be obvious as each art is based on well known concepts at the time of the invention and one of average skill in the art would have been aware of each art. Further, one would have been motivated to combine the arts as the concepts of clusters, console management center and updating devices within the cluster are well known with other devices and it is obvious to replace one network device with another network device to one of average skill in the art.

Regarding claim 27, IBM-Bruckert-Pangrac-Byrne-Hosler further discloses the receiving step comprises receiving user input specifying a configuration command for the cluster [IBM, page 77, Cluster Single Point of Control, page 50, Cluster Manager, (user initiated events... the cluster manager runs scripts in response to cluster events), page 73, Reconfiguring a Cluster Dynamically, paragraph 2]; and

wherein the performing step comprises automatically communicating the configuration command [IBM, page 77, Cluster Single Point of Control, page 50, Cluster Manager, (user initiated events... the cluster manager runs scripts in response to cluster events), page 73, Reconfiguring a Cluster Dynamically, paragraph 2] to each of the active routers in the plurality of active routers [Bruckert, paragraph 27].

Regarding claims 3 and 28, IBM-Bruckert-Pangrac-Byrne-Hosler further discloses subscribing a management process to an event bus [IBM, page 77, Cluster Single Point of Control, page 50, Cluster Manager, (user initiated events... the cluster manager runs scripts in response to cluster events), page 73, Reconfiguring a Cluster Dynamically, paragraph 2];

subscribing each of the active routers [Bruckert, paragraph 27] to the event bus [IBM, page 77, Cluster Single Point of Control, page 50, Cluster Manager, (user initiated events... the cluster manager runs scripts in response to cluster events), page 73, Reconfiguring a Cluster Dynamically, paragraph 2]; and

publishing the configuration command in an event on the event bus [IBM, page 77, Cluster Single Point of Control, page 50, Cluster Manager, (user initiated events... the cluster manager runs scripts in response to cluster events), page 73, Reconfiguring a Cluster Dynamically, paragraph 2].

Regarding claims 4 and 29, IBM-Bruckert-Pangrac-Byrne-Hosler further discloses receiving the event [Bruckert, paragraph 27] to the event bus [IBM, page 77, Cluster Single Point of Control, page 50, Cluster Manager, (user initiated events... the cluster manager runs scripts in response to cluster events), page 73, Reconfiguring a Cluster Dynamically, paragraph 2];

extracting the configuration command from the event [Bruckert, paragraph 27] to the event bus [IBM, page 77, Cluster Single Point of Control, page 50, Cluster Manager,

(user initiated events... the cluster manager runs scripts in response to cluster events), page 73, Reconfiguring a Cluster Dynamically, paragraph 2]; and

presenting the configuration command to a native console [Bruckert, paragraph 27] to the event bus [IBM, page 77, Cluster Single Point of Control, page 50, Cluster Manager, (user initiated events... the cluster manager runs scripts in response to cluster events), page 73, Reconfiguring a Cluster Dynamically, paragraph 2].

Regarding claims 5 and 30, IBM-Bruckert-Pangrac-Byrne-Hosler further discloses the configuration command is a configuration load command [Bruckert, paragraph 27] to the event bus [IBM, page 77, Cluster Single Point of Control, page 50, Cluster Manager, (user initiated events... the cluster manager runs scripts in response to cluster events), page 73, Reconfiguring a Cluster Dynamically, paragraph 2].

Regarding claims 6 and 31, IBM-Bruckert-Pangrac-Byrne-Hosler further discloses the configuration command is a configuration execution command [Bruckert, paragraph 27] to the event bus [IBM, page 77, Cluster Single Point of Control, page 50, Cluster Manager, (user initiated events... the cluster manager runs scripts in response to cluster events), page 73, Reconfiguring a Cluster Dynamically, paragraph 2].

6. Claims 7 and 32 rejected under 35 U.S.C. 103(a) as being unpatentable over IBM-Bruckert-Pangrac-Byrne-Hosler as applied to claims 1 and 26 above, and further in view of Mittal et al., (US Publication No. 2004/0268112), (hereinafter Mittal).

Regarding claims 7 and 32, IBM-Bruckert-Pangrac-Byrne-Hosler further discloses wherein the user input is received in a graphical user interface [IBM, page 77, Cluster Single Point of Control, page 50, Cluster Manager, (user initiated events... the cluster manager runs scripts in response to cluster events), page 73, Reconfiguring a Cluster Dynamically, paragraph 2], and further comprising the step of displaying an execution log for the configuration command [IBM, page 77, Cluster Single Point of Control, page 50, Cluster Manager, (user initiated events... the cluster manager runs scripts in response to cluster events), page 73, Reconfiguring a Cluster Dynamically, paragraph 2].

IBM-Bruckert-Pangrac-Byrne-Hosler does not specifically disclose within the same graphical user interface in which the user input is received.

However, Mittal, in the same field of endeavor discloses using a graphical user interface as a cluster manager [Mittal, paragraph 30].

It would have been obvious to one having ordinary skill in the art at the time the invention was made to include a GUI console in order to provide the user with a more user friendly interface. It would have been obvious to combine Mittal, as Mittal discloses managing a cluster.

7. Claims 8 and 11-23 rejected under 35 U.S.C. 103(a) as being unpatentable over IBM-Bruckert-Pangrac-Byrne-Hosler as applied to claim 1 above, and further in view of John et al., (US Publication No. 2004/0088412), (hereinafter John).

Regarding claim 8, IBM-Bruckert-Pangrac-Byrne-Hosler further discloses receiving, at a single console control point for a network device cluster, first user input [IBM, page 77, Cluster Single Point of Control, page 50, Cluster Manager, (user initiated events... the cluster manager runs scripts in response to cluster events), page 73, Reconfiguring a Cluster Dynamically, paragraph 2];
wherein the cluster comprises a first switch device, a stack consisting of one or more active routers and one or more standby routers [IBM, page 83, Sample Cluster Configuration], and a second switch device [Bruckert, paragraphs 27, 106 and 112].

IBM-Bruckert-Pangrac-Byrne does not specifically disclose requesting an operational overview of the cluster; and

generating and displaying an operational overview of the cluster, wherein the operational overview comprises a status indication, connection information, failed device information, and a first access icon for accessing information about the stack.

However, John, in the same field of endeavor discloses a cluster management console presenting cluster information to the user including cluster status, configuration, errors, warnings and an iconic view of the associated clusters [John, paragraph 92 and figure 11].

It would have been obvious to one having ordinary skill in the art at the time the invention was made to include a GUI console with an overview of the clusters and any status information associated with them in order to provide the administrator with easy access to monitor the status, configure the cluster system when needed and provide updates to the cluster on an as needed basis.

Regarding claim 11, IBM-Bruckert-Pangrac-Byrne-Hosler-John further discloses receiving first user input in a user interface (UI) at a single console control point for a network device cluster [IBM, page 77, Cluster Single Point of Control, page 50, Cluster Manager, (user initiated events... the cluster manager runs scripts in response to cluster events), page 73, Reconfiguring a Cluster Dynamically, paragraph 2] that identifies a first switch device and a second switch device for the cluster [Bruckert, paragraph 27];

receiving second user input in the UI that identifies a plurality of network elements [John, paragraph 92] for a router stack of the cluster [Bruckert, paragraph 27];

receiving third user input in the UI [John, paragraph 92] that defines at least one first connection of the first switch device [Bruckert, paragraph 27] in association with at least one network element in the stack, and at least one second connection [John, paragraph 92] of the second switch device [Bruckert, paragraph 27] in association with the at least one network element in the stack [John paragraph 92]; and

associating the first, second, and third user input in a cluster object [John paragraph 92] that programmatically represents the cluster [John, paragraph 92].

Regarding claim 12, IBM-Bruckert-Pangrac-Byrne-Hosler-John further discloses

receiving information specifying that a network element in the cluster has failed [John, paragraphs 92, 95, 97 and 99];

based on the cluster object, selecting a substitute network element from among one or more available network elements from the router stack [John, paragraph 92];

receiving connection configuration information from the identified network element [John, paragraphs 92, 95, 97 and 99]; and

based on the connection configuration information, re-configuring the substitute network element and the first and second switch devices associated with the identified network element, wherein the re-configuring causes the first and second switch devices to change one or more connections from the identified network element to the substitute network element [John, paragraphs 92, 95, 97 and 99].

Regarding claim 13, IBM-Bruckert-Pangrac-Byrne-Hosler-John further discloses creating one or more sets of commands to configure [John, paragraphs 92, 95, 97 and 99] the first and second switch devices [Bruckert, paragraph 27]; and
publishing a configuration load event that includes the commands and that targets only the first and second switch devices [Bruckert, paragraph 27] associated with the identified and substitute network elements [John, paragraphs 92, 95, 97 and 99].

Regarding claim 14, IBM-Bruckert-Pangrac-Byrne-Hosler-John further discloses in response to the configuration load event, each of the first and second switch devices connecting to a cluster manager and receiving a particular set of commands [John, paragraphs 92, 95, 97 and 99];
at each of the first and second switch devices, processing the particular set of commands, wherein processing includes causing the first and second switch devices to change the one or more connections from the identified network element to the substitute network element [John, paragraphs 92, 95, 97 and 99]; and
at each of the first and second switch devices, publishing a configuration complete event to acknowledge completing the processing of the particular set of commands [John, paragraphs 92, 95, 97 and 99].

Regarding claim 15, IBM-Bruckert-Pangrac-Byrne-Hosler-John further discloses the third user input includes information defining a set of commands used to reconfigure at least one switch device [John, paragraphs 92, 95, 97 and 99].

Regarding claim 16, IBM-Bruckert-Pangrac-Byrne-Hosler-John further discloses the first, second and third user inputs are stored persistently at a cluster manager [John, paragraphs 92, 95, 97 and 99]; and
wherein each of the switch devices and the plurality of network elements persistently stores startup configuration information, but does not store the first, second and third user inputs [John, paragraphs 92, 95, 97 and 99].

Regarding claim 17, IBM-Bruckert-Pangrac-Byrne-Hosler-John further discloses the second user input comprises information identifying one or more network elements from the plurality of network elements as back-up network elements [John, paragraphs 92, 95, 97 and 99].

Regarding claim 18, IBM-Bruckert-Pangrac-Byrne-Hosler-John further discloses the second user input comprises information identifying one or more network elements from the plurality of network elements as stand-by network elements [John, paragraphs 92, 95, 97 and 99].

Regarding claim 19, IBM-Bruckert-Pangrac-Byrne-Hosler-John further discloses the step of receiving a fourth user input in the UI that modifies information received in the second and third user inputs [John, paragraphs 92, 95, 97 and 99].

Regarding claim 20, IBM-Bruckert-Pangrac-Byrne-Hosler-John further discloses the step of receiving a fourth user input in the UI that identifies the at least one network element as removed from the plurality of network elements [John, paragraphs 92, 95, 97 and 99].

Regarding claim 21, IBM-Bruckert-Pangrac-Byrne-Hosler-John further discloses the step of receiving a fourth user input in the UI that disassociates at least one switch device with at least one network element from the plurality of network elements [John, paragraphs 92, 95, 97 and 99].

Regarding claim 22, IBM-Bruckert-Pangrac-Byrne-Hosler-John further discloses the first, second, and third user inputs define a logical stack object, wherein the logical stack object is identified by a stack name and represents a logical grouping of at least two switch devices [Bruckert, paragraph 27] and at least one network element [John, paragraphs 92, 95, 97 and 99].

Regarding claim 23, IBM-Bruckert-Pangrac-Byrne-Hosler-John further discloses the step of receiving a fourth user input in the UI that requests sending a command to all

switch devices and all network elements represented by the logical stack object [John, paragraphs 92, 95, 97 and 99].

Conclusion

Examiner's Note: Examiner has cited particular paragraphs / columns and line numbers in the reference(s) applied to the claims above for the convenience of the applicant. Although the specified citations are representative of the teachings of the art and are applied to specific limitations within the individual claim, other passages and figures may apply as well. It is respectfully requested from the applicant in preparing responses, to fully consider the references in entirety as potentially teaching all or part of the claimed invention, as well as the context of the cited passages as taught by the prior art or relied upon by the examiner.

Should applicant amend the claims of the claimed invention, it is respectfully requested that applicant clearly indicate the portion(s) of applicant's specification that support the amended claim language for ascertaining the metes and bounds of applicant's claimed invention

Any inquiry concerning this communication or earlier communications from the examiner should be directed to WILLIAM GOODCHILD whose telephone number is

(571)270-1589. The examiner can normally be reached on Monday - Friday / 8:00 AM - 4:00 PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vivek Srivastava can be reached on (571) 272-7304. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/WJG/

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